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REMARKS

Claims 1-16 were pending when last examined, all of which stand rejected. Claims 1 and 13 are amended. Applicant requests reconsideration and allowance of all the pending claims based on the amendments and arguments set forth below.

Claim Rejections – 35 USC §102

Claims 1-16 are rejected under 35 USC 102(e) as being anticipated by U.S. Patent Application Publication 2003/0043100 to Moon ("Moon").

Independent Claim 1 is patentable over Moon at least because it recites that "the data driving ICs are supplied with a reference voltage, a ground voltage and a supply voltage and voltage levels of the image data swing with respect to the reference voltage...." By supplying the reference voltage to the data driving ICs, the device of Claim 1 allows a low-voltage cascade type connection with fewer signal lines and lower electromagnetic interference.

In the device in Moon, the data driving ICs are divided into a first group $3_1 - 3_k$ and a second group $3_{k+1} - 3_n$. Both groups of data driving ICs receive data signals, which are inputted from both ends (e.g., one end starting a data driving IC 3_1 and the other end starting at data driving IC 3_n) concurrently and shifted on a driving-IC by driving-IC basis. Each data driving IC has a shift direction selecting terminal S, which determines the shift direction according to whether it receives a voltage V_{DD} or a GND voltage. There is, however, no reference voltage that is supplied to the data driving ICs in Moon. Although the Office Action of May 5 indicates that the reference voltage application is taught in Moon's paragraphs 39 and 40, these paragraphs only make reference to the selection of shift direction. There is not even a suggestion of supplying the data driver ICs with reference voltage V_{ref} in Moon. Thus, Claim 1 is patentable over Moon.

Furthermore, Claim 1 is patentable over Moon for the additional reason that it recites that the reference voltage is "lower than the supply voltage." Moon, which is silent about the reference voltage, does not disclose or suggest that the reference voltage is lower than the supply voltage (e.g., V_{DD}).

Dependent Claims 2-12 depend from Claim 1 and are therefore patentable over Moon for at least the same reasons as Claim 1.

Dependent Claim 9 is patentable over Moon for the additional reason that it recites that “the reference voltage is inputted to the data driving ICs simultaneously.” Moon, which is silent about providing the reference voltage to the data driving ICs, does not disclose or suggest that the reference voltage is provided simultaneously to the data driving ICs.

Independent Claim 13 is patentable over Moon at least because, similarly to Claim 1, it recites that “the data driving ICs are supplied with a reference voltage, a ground voltage and a supply voltage and voltage levels of the image data swing with respect to the reference voltage” As stated above with respect to Claim 1, Moon does not teach or suggest supplying a reference voltage to the data driving ICs.

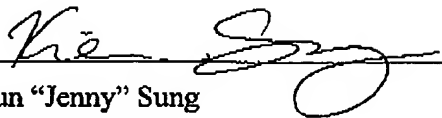
Like Claim 1, Claim 13 is patentable over Moon for the additional reason that it recites that the reference voltage is “lower than the supply voltage.” This is not taught or suggested by Moon, as explained above.

In rejecting Claims 11 and 15, the Examiner stated that the low voltage differential signaling (LVDS) is equivalent to the image data having a voltage swing level lower than a voltage swing level of a signal transmitted in TTL/CMOS transmission. Applicants disagree with this statement, especially in light of the fact that one of the advantages of the subject invention is that fewer signal lines are required. 11 and 15 depend from Claims 1 and 13, which recite that “voltage levels of the image data swing with respect to the reference voltage lower than the supply voltage.” This type of voltage swing, such as in the case of a low voltage cascade connection (LVCC) type signaling, is different from LVDS or RSDS. To transmit a data signal of the RSDS or LVDS type, symmetrical signals that are positive and negative with respect to the data signal are generated. To transmit the signals of opposite polarity, two signal lines are used for each data signal. In contrast, in the case of LVCC type signaling, the data signal swings with respect to a reference voltage, so only one signal line is used to transmit the data signal. For example, while RSDS signaling would use six signal lines to transmit three data signals (a line for a positive and a negative polarity signal for each of the three data signals), LVCC signaling would use only four signal lines (three lines for the three data signals and a fourth line for the reference voltage). Thus, Moon does not disclose or suggest “voltage levels of the image data swing with respect to the reference voltage”

For the foregoing reasons, Claims 1-16 are now in condition for allowance.

Please call the undersigned attorney at (408) 392-9250 if a telephone conversation would expedite the closing of prosecution for this case.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Kieun Sung', is written over a horizontal line.

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